Appl. No. 10/053,130
Amdt. Dated Nov. 30, 2005
Reply to Office Action of August 25, 2005

AMENDMENTS TO THE CLAIMS:

The following listing of the claims replaces all prior versions, and listings, of the claims in this

application:

Listing of claims:

1. (Currently amended) A method for image compression while maintaining high resolution in

selected areas within an image, comprising:

a)   representing an acquired image by a two dimensional array of MxN pixels;

b)   dividing said array into blocks of identical rectangular areas, each of said blocks having

a block size of AxB pixels, wherein A<M,N and B<M,N and M=m*A (m=2,3,...) and[[;]] N=n*B

(n=2,3,...);

c)   storing data related to a division of said array into blocks;

d)   for each pixel, defining a pixel attribute value;

e)   for each pixel, determining a represented value, being a representation of said pixel attribute

value;

f)   determining a threshold level for said pixel attribute value;

g)   calculating a represented value for each block and storing said represented value;

h)   comparing the represented value of each block to the represented value of its adjacent

blocks;

i)   whenever the difference between the represented values of two adjacent compared blocks is

greater then than said threshold level and as long as the block size is larger than one pixel:

ih.1)   dividing said adjacent compared blocks into sub-blocks, each of which containing A/2xB/2

pixels and storing data related to a division of said adjacent compared blocks into sub-blocks;

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ih.2)   calculating and storing the represented value for each sub-block and for its adjacent sub-

blocks;

ih.3)   comparing the stored represented value of each sub-block to the stored represented value of

its adjacent sub-blocks; and

j)   whenever the difference between two adjacent compared blocks or sub-blocks is lower than,

or equal to, said threshold level, representing said blocks or sub-blocks by representative pixels with

identical attribute level which is equal to the represented value of the pixels that correspond to said

compared block or sub-block, thereby compressing said image.

2. (previously presented) A method according to claim 1, wherein the pixel attribute value is

pixel's intensity and/or any pixel's attribute that can be represented by an analog value.

3. (previously presented) A method according to claim 1, wherein the represented value of a block

is a value being average of all attribute values of pixels in said block.

4. (previously presented) A method according to claim 1, wherein the represented value of a block

is a value being variance of all attribute values of pixels in said block.

5. (previously presented) A method according to claim 1, wherein the represented value of a block

is a value being standard deviation of all attribute values of pixels in said block.

6. (previously presented) A method according to claim 1, wherein the represented value of a block is a value being a difference between highest pixel's attribute value in said block and lowest pixel's attribute value in said block.

7. (previously presented) A method according to claim 1, wherein the stored represented value of each sub-block is an analog value.

8. (Original) A method according to claim 1, wherein the stored data related to the division of said array into blocks and/or into sub-blocks is a digital value.

9. (Original) A method according to claim 1 or 8, wherein the stored data related to the division of said array into blocks and/or into sub-blocks comprises indications that corresponds to location of said blocks or sub-blocks in the two-dimensional array.

10. (previously presented) A method according to claim 1, further comprising coding the compressed image by representative pixels and the stored data related to the division of the array into blocks and/or sub-blocks.

11. (currently amended) A method according to claim 1, wherein the image compression is carried out in real-time by performing steps of:

k) reading a group of rows from the two-dimensional array, which corresponds to a block dimension;

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l)   concurrently or parallely, compressing a portion of said image that corresponds to said

group of rows and reading a next group of rows, being subsequent to said group, from the two-

dimensional array, which corresponds to dimension of another block;

m)   repeating steps j) and k) and l) until all rows of said two-dimensional array are read.

12. (previously presented) Apparatus for image compression while maintaining high resolution in

selected areas within an image, comprising:

a)   a two-dimensional array of MxN pixels;

b)   a data storage bank for storing a group of pixels from said array;

c)   sensor means for sensing analog values defined as pixels' attribute values;

d)   circuitry for calculating, from attributes, a represented value for said group of pixels;

e)   a set of one or more comparators for comparing difference between said represented

value and a represented value of another group of pixels, to a predetermined threshold value;

f)   circuitry for storing data that represent one or more adjacent groups of pixels, for which

said difference is not greater than said represented value; and

g)   control circuitry for controlling data transfer between said two dimensional array and

said data storage bank, for controlling the circuitry for calculating, for controlling said set of one or

more comparators and for controlling data transfer into said circuitry for storing data.

13. (previously presented) Apparatus according to claim 12, wherein the data storage bank is a

capacitor bank .

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14. (previously presented) Apparatus according to claim 12, wherein the attribute value is an intensity of a pixel and/or attribute of a pixel that can be represented by an analog value.

15. (previously presented) Apparatus according to claim 12, comprising circuitry for storing one or more analog values and/or circuitry for storing one or more digital values.

16. (previously presented) Apparatus according to claim 12 or 15, further comprising circuitry for storing data related to a division of said array into blocks and/or into sub-blocks, and/or indications that corresponds to location of said blocks or sub-blocks in the two-dimensional array.

17. (currently amended) Apparatus according to claim 12, further comprising circuitry for coding data stored by the circuitry for storing data ~~the compressed image~~ by ~~the~~ representative pixels and ~~the~~ stored data related to a division of the array into a plurality of blocks ~~and/~~or sub-blocks or blocks and sub-blocks.

18. (currently amended) Apparatus according to claim 17, further comprising circuitry for transmitting data coded by the circuitry for coding ~~coded compressed image~~.

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